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Determinants of Corporate Performance of Listed Companies in Indonesia

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VERY PRELIMINARY

Abstract

This paper is basically concerned with the factors determining corporate performance of listed companies in Indonesia, especially due to the 1997 financial crisis. The main results are fairly interesting in which firm size is positively related to firm profitability, but it is not related to market capitalization. It means that firm size is matter on the fundamental value of the firms, but it should not be important variable for market value of the firms. By employing panel data of 238 listed companies in Jakarta Stock Exchange (JSX) in the period 1994 – 2004 as the sample, we also find that macro factors are more important variables inducing firm performance, rather than firm-specific factors. It could be due to the 1997 great crisis. Our results also show that ownership factor matters on firm performance by the evidence that firms with majority foreign ownership have much higher performance in both measurements namely return on asset (ROA) and market capitalization growth than domestically-owned firms. Ordinary Least Square (OLS) is employed for the estimation procedure in this paper.

Key words: firm performance, firm strategy and financial crisis

JEL Classification: E32 (Prices, Business Fluctuations, and Cycles), L1 (Market Structure, Firm Strategy, and Market Performance)

1. Introduction

The question of why a firm succeeds and other fails to compete and evolve through times becomes one of the most important issues in strategic management as well as organization studies. In Indonesia, due to financial crisis in 1997, several firms fail to survive and others success to be passing through the trouble period. This paper intends to understand factors determining the success and failure of the firms, especially when the turbulence moment is present.

The study engages with crucial question of what determine firm value of listed companies in Indonesia, especially when crisis is present. Many previous studies found that big firms were more fragile than small ones. But there is no single factor in explaining firm success and failure. Many studies also show that higher debt ratio means higher risk to bankrupt and therefore debt should be an important factor affecting firm value. Meanwhile, firms with international access are commonly assumed as firms with greater possibility to be survived.

However, according to heterogeneity argument, the external shocks should give specific effect to each firm and the consequence is that even firms face the same external shock the response would be different which would be based upon their internal characteristic of the firm. It is therefore important to investigate the firm-level performance in Indonesia. It should be interesting evidence in the studies of firm behaviour.

The objectives of this paper are twofold. First, examining factors determining corporate performance in Indonesia. In this case, we intend to find the answer of the question of whether firm size matters on firm performance. Second, we are also concerned on the institutional factor inducing firm performance. In this case, we apply the estimation by introducing ownership structure of the firms by posing a question of whether firms with majority foreign ownership would be better in both, profitability and market capitalization growth.

By this study, we intend to know what factors determining corporate performance in Indonesia. Especially, we are interested in the issue of firm size by examining the relationship between firm size and performance. And the research question is therefore whether larger firms should have better performance due to financial crisis in 1997 in Indonesia than smaller ones.

We use return on asset (ROA) and market capitalization for measuring firm performance. Since we have a great concern on the impact of financial crisis on corporate performance, we explicitly run estimation for the different period, namely before and after

crisis period. We also include several macro variables, such as inflation and interest rates for controlling our estimation. Data of financial ratio is obtained mainly from database of Jakarta Stock Exchange and ECFIN (Institute for Economic and Financial Research).

This study uses about 238 listed companies in Jakarta Stock Exchange, with at least 5 consecutive years, during period 1994 – 2004. Ordinary least square (OLS) for panel data is considered as a sufficient method for estimation procedures.

2. Theoretical Perspective

The effects of firm size on corporate performance have gained important attentions in the research of the firm. According to common intuition, the size of the firm has an important role in firm performance for many reasons. In a certain perspective of studies, size can be a proxy of firm resource. Since larger firms have more organizational resources, they give larger firms the better equipment to achieve their goals (Penrose, 1959; Koh and Venkataraman, 1991). Size can also proxy for the probability of default and the volatility of firm assets. It assumes that larger firms are more difficult to liquidate. Fama and French (2002) stated that low volatility firm are less to default.

Based upon the explanation of Majumdar (1997) whether larger firms are superior in performance to smaller firms, or vice-versa, and whether older firms are superior in performance to younger firms, or vice-versa, have generated large amounts of theoretical and empirical research in the economics, management and sociology disciplines. This paper is basically concerned with the previous question by focusing on the firm performance issues with the firm size criteria.

Majumdar (1997) also point out the previous studies in which larger firms generate superior performance relative to smaller firms (Penrose, 1959) and size is correlated with market power (Shepherd, 1986). The argument of Penrose is based upon the assumption that external constraints to growth arise from a combination of increasing market saturation and more intensive competitive pressure. In that situation, larger firms would be more suited with the external environment.

On the issue of the relation between size of growth, the conclusion is divergent. A number of empirical studies suggest a negative relationship between growth and size, indicating that smaller firms have higher and more variable growth rates which reduce their survival rate (Mata, 1994) while other studies (Singh and Whittington, 1975) have found a positive relationship.

Some empirical research tell us on how firm size can matter for firm behaviour and performance. Wincent (2005) highlighted a framework that firm size can foster in strategic Small Medium Enterprises (SME) network. Larger firms are suggested to have advantages for behavior and performance compared to the smaller firms. They improve performance simultaneously as they bind firms together in the SMEs networks.

Kakani and Kaul (2001) identified that firm size, marketing expenditure, and international exposure had a positive relation with its shareholder values. Meanwhile Wu (2006) determined that firm size affects on firm performance. He noticed that larger firms look able to have stronger competitive capability than smaller ones as a result of their superior access to resources.

The discussion about the theory implications for firm size and firm performance usually follows the structure that developed by Kumar, Rajan and Zingales (2001). The classification of the theories of the firm can be based on: the environment where the operation of the firms (institutional theory); the production technology used by the firm (the technological theory) and the organizational architecture (the organizational theory). The elaborations of these theories are described as follows :

1. *Institutional Theory*: Based on the institutional theories, firm size relate to such environment factors as : legal regime, market environment, political stability, etc. There is a tendency that capital-intensive firms are become larger in countries with efficient legal system and that R&D intensive industries have larger firms in countries with stronger patent protection (Kumar, Rajan, Zingales, 2001).
2. *Technological Theories*: According to technological theories, firm size relate to the economies of scale and scope physical capital. The increasing economies of scale will decrease the cost of production. Thereby, the return on capital will increase and affect in increasing firm size. The lowering production cost and improving efficiency will shift at the turning point. After that point, the bigger the economies scales will affect the increasing production cost, hence profitability tend to fall.
3. *Organizational Theories*: Organizational theories consist of: transaction cost theory (Williamson, 1985), agency cost theory (Jensen and Meckling, 1979) span of control cost, critical resources theory (Grossman and Hart, 1986) and competency theories of the firm (Niman, 2002). Transaction cost is all costs that related with planning, organizing and controlling in organization. The agency cost are all cost that emerge out of disagreement of interest among the stakeholders of the firm because of information asymmetries and self seeking behaviour. Span control cost is all cost that

related with the layers of management and administrative staff in companies. Transaction cost, agency cost and span of control cost theories emphasize that an optimal size for the firm in terms of profitability reach at some point when the average transaction and agency cost set the most minimum value and the economies of scale and scope achieve the most maximum value.

The critical resources theory stressed the importance of the resources that determine of the firm size. The ability to maintain and control a critical resources to make the firm profitable allows the firm to remain competitive. The more important these resources, the more effort the firm have to keep.

The competency theories of the firm determine that the firm is a collection of competencies that allow it to earn more than its opportunity cost of capital (Kaen, 2003). The competencies can be formed as superior marketing skills, superior manufacturing technologies and so on. These competencies allows the firm to earn more than an adequate return. The implication of these theories are the emphasisment of the secret, the competencies that have to be protected and avoided to be acquired from the competitors. If we think the critical resources of the firm are the competencies, then we can join the critical resources theories with the competencies of the firm. In order to keep the secret better, then the dissemination of the secrets is restricted to several stakeholders. It implies restricting the size of the firm, where size is identified in terms of employees. Hence, based on these joint theories, small firm can be as profitable as larger ones. The small firms can have a unique competencies that allow it to differentiate from their competitor. Niman (2002) described that the survivalibility of the firms depends not on being better, but rather on being sufficiently different, due to different competencies, so that the advantages of others do not prove fatal.

Accordingly, the relation between firm size and corporate growth or performance is relatively rich and vast addressed by several cross-cutting strands of studies in different concern. We differentiate the studies into two main strands, which is theoretical and empirical. The parties of theoretical studies are described above, whereas empirical ones are cited shortly as follows.

By employing rich panel data for developed and developing countries, Forbes (2002) finds that firms with greater foreign sales exposure have significantly better performance after depreciations and firms with higher debt ratios tend to have lower net income growth. Desai,

Foley and Forbes (2004) find different responses between U.S. multinational affiliates and local firm when depreciation is present. U.S. multinational affiliates have higher sales, assets and investment than local firms during, and subsequent to, currency crisis.

Horst (1972), Lall (1986), Grubaugh (1987) indicate that firm size is probably the most important determinant of foreign direct investment decisions. Specifically, Horst (1972) finds in the study of US investment to Canada that firm size is the only important explanatory firm attribute with the positive coefficient in explaining the incidence of investment. The study of Lall (1986) finds that firm size is one of the necessary firm attribute for Indian firms FDI. The larger firms have been the most dominant ones that doing FDI. In the other side, Kojima (1985) stated an adversary result in Japan by which he finds that the small size Japanese multinational companies is dominant player investing in Asia countries. The companies is becoming comparatively disadvantages because of the production cost in Japan.

Several studies confirm that firm size effects have been the most important factor influencing financial performance (Baker, 1997; Greening, 1995; Hoskinsson, 1987). However, others found mixed effects or no effects (Westphal, 1998; Zajac, 1990; Reimam, 1975). The mixed results exhibited by some studies. Stekler (1963) and Osborn (1870) reported that size does not seem to be associated with higher profit. The conflicting conclusion reached by Hall and Weiss (1967) that find association between size and profit among the Fortune 500 companies for the years 1956-1962.

Relating to financial crisis, Forbes (2002) differentiates several channels by which currency depreciations affect firm performance. First, depreciation could downgrade firm competitiveness since the cost of imported inputs raises relatively to foreign competitors. Second, depreciation may provide exporters with a relative cost advantage relative to foreign competitors. Third, depreciation could generate higher borrowing costs and a contraction in lending. The impact of currency depreciation should be based on the heterogeneity of the firms.

Liu (2004) demonstrate the determinants of UK corporate failures by modelling the short-run and long-run behaviours of corporate failure rates in relation to macroeconomic phenomena over the period 1966-1999 and finds that failure rates are associated with interest rates, credit, profits, price, and corporate birth rates both in the short run and in the long run. Furthermore, this study also finds that among those macroeconomic variables, interest rate appears to be an important factor influencing failure rates and can be used as a feasible policy instrument to reduce the incidence of corporate failures.

3. Empirical Results

3.1. Data

This paper begins the study with analyze financial ratio of listed companies in Indonesia by using the accounting data provided by the Jakarta Stock Exchange (JSX) and Indonesian Capital Market Directory published by ECFIN (Institute for Economic and Finance Research) in various publications.

The accounting data covers the period of 1994-2004. We include all non-financial sectors and exclude the financial sector, since the debt structure of banks and investment institutions is not comparable to that in other sectors. All variables of data are deflated by wholesale price index (WPI) in 2000 for gaining the constant price. This paper includes 238 listed companies with at least 5 consecutives years.

And for ownership structure we access directly to the annual report of the firms documented by JSX. We note ownership structure in 1996 for proxy of ownership in before crisis period and 2003 for post-crisis. For data treatment we use STATA version 8 package.

2. Simple Model

$$Y_{it} = \alpha_i + \beta X_{it}^{firm} + \phi X_t^{macro} + \varepsilon_{it}$$

Dependent variables:

1. Rate of return on assets (ROA), which is defined as earnings before interest and taxes (EBIT) / total assets.
2. Market Capitalization growth

Independent variables:

Main Independent variable

Firm Size = natural logarithm of total assets in Rupiah at the constant price

Controlling variables:

1. Leverage: total debt/equity
2. Liquidity: Short-term debt/ total debt (STD/TA)
3. Solvency : short-term assets/short-term debt (STA/STD)
4. Interest rates
5. Inflation
6. capital market development

where i is a subscript for each firm and t for each year. Y_{it} represent firm performance measured by profitability or Return on Asset (earning before interest and tax deflated by total asset) and market capitalization growth¹.

4. Result and Discussion

Our empirical evidence shows that firm-specific factors are less important compared to macro factors in explaining firm performance in both ROA (profitability) and market capitalization growth. We have three macro factors, namely inflation, annual interest rate fluctuation and capital market development. It may be due to the currency depreciation in 1997 – 1998.

Inflation is negatively related to firm performance, whereas capital market development has different impact for profitability and market capitalization growth. Consistent with most theoretical prediction, inflation undermines firm performance. However, we are surprised with the evidence that annual interest rate is positively related to firm performance, whereas the coefficients are relatively weak. We may have to use monthly interest rate instead of annually interest rate to investigate the relation between interest rate fluctuation and firm performance.

Capital market development decreases with firm profitability, but it increases with market capitalization growth. By nature, capital market is the important source of firm when they need fresh money to boost their production or investment. Firm can borrow from bank, as well as they can use their internal equity in capital market. By this evidence, we can draw a tentative conclusion that firm in Indonesia does not profit thoroughly from capital market to finance their business activities. More develop capital market, in our case, means smaller profitability. Meanwhile, capital market development is positively related to market capitalization growth. It is consistent with most theoretical prediction in which the growth of capital market coincides positively with the growth of market capitalization of the firms.

Concerning on firm-specific factor, in total period (1994-2004), firm size is positively related to profitability in 90 percent of confidence level, whereas it is not significantly related to market capitalization growth. By these evidences, we can say that firm size increase with firm profitability, which means that bigger firm gain more profit in their operation. Furthermore, firm size is nothing to do with market capitalization growth. This latter finding

¹ Market capitalization growth is calculated by equation as follows: $\frac{X_{(t)} - X_{(t-1)}}{X_{(t-1)}}$

is interesting in a sense that firm size is more related to fundamental value of the firms rather than market value of the firms.

When we discriminate estimations by considering time period, we find that in post-crisis period the level of significance augments for firm size, whereas the sign is consistent. Meanwhile, pre-crisis estimation has no level of significances. Firm size is always not significantly related to market capitalization growth.

In our empirical evidence, we find that leverage is negatively related to fundamental firm value, but it is positively related to market value of the firms. It seems that market value of the firms does not consider much the level of the corporate leverage, whereas profitability is negatively affected. In post-crisis, market capitalization do not relate with leverage.

Liquidity measured by short-term debt deflated by total debt is more relevant with market capitalization growth rather than with firm profitability. It seems that market value of the firms is based upon the debt maturity or firm liquidity. Meanwhile, solvability, which is measured by short-term asset deflated by short-term debt, does not matter on firm performance.

In addition, this paper is also concerned with the role of foreign ownership participation on the firm performance. Normatively, firm with foreign ownership should be easier to access international capital market or access to headquarter to support their activities in developing countries. It is therefore interesting to investigate empirically the different institutional factors in determining firm performance.

To do that, firstly, we split sample into two categories, namely firm with more than 50 percent foreign ownership participation and not. We apply the test of significant difference between two groups of sample in firm profitability and market capitalization growth. We consistently find that domestic firms have much less firm performance. Furthermore, the different of firm profitability is more remarkable than the different of market capitalization growth.

5. Conclusion

Two principal evidences could be sorted from our results. First, macro factors are more relevant in explaining firm performance. Second, by nature, market value of the firms is more volatile than fundamental value of the firms.

Profitability is relevant to valuate firms in fundamental value, whereas market capitalization growth reflects the market value or market perception for the firms. Since the

capital market in Indonesia, like in other emerging countries, is relatively volatile and therefore could be misleading for evaluate the firm performance.

In our case, firm size is more relevant with fundamental value of the firm, rather than market value. It seems that investors in capital market do not consider the size of the firms as an important variable for their valuation. It is also the case for firm leverage. Leverage is negatively related to fundamental value of the firm, but it increase with market value of the firms perceived by investors in capital market.

The latter issue is relevant with behavioural finance, which should be interesting to be addressed in the context of capital market behaviour, like Jakarta Stock Exchange. It should be an agenda for further research**.

References

- Desai, M. A., C. F. Foley, and K. J. Forbes. 2004. Financial constraints and growth: multinational and local firm responses to currency crises, *NBER Working Paper* No.W10545.
- Forbes, Kristin J., 2002. How do large depreciations affect firm performance?, *IMF Staff Paper*, Vol.49, Special Issue.
- Liu, Jia, 2004. Macroeconomic determinants of corporate failures: evidence from the UK, *Applied Economics*, Volume 36, Number 9 / May 20.
- Majumdar, S., 1997. The Impact of Size and Age on Firm-level Performance: Some Evidence from India. *Review of Industrial Organization* 12, 231-241.
- Penrose, E. T. (1959). *The Theory of the Growth of the Firm*. New York: John Wiley.
- Shepherd, W.G. "On the core concept of industrial economics", in de Jong H.W. and Shepherd W.G. *Mainstreams in Industrial Organisation*, Dordrecht: Martinus Nijhoff, 1986.
- Singh, A., G. Whittington, 1975. The size and growth of firms, *The Review of Economic Studies*, 42,15-26

Table 1. Result of OLS Regression

Dependent variables are ROA (Return-on-Asset) as a proxy of profitability or fundamental value of the firm and Delta-MC (Market Capitalization Growth) as a proxy of market value of the firm. The main independent variable is *Firm Size* and for controlling variables, we have two sets of variables (firm-level and macro-level variables).

$$\text{The equation: } Y_{it} = \alpha_i + \beta X_{it}^{firm} + \phi X_t^{macro} + \varepsilon_{it}$$

We do not include the result of pre-crisis market capitalization growth since several estimations are dropped which may be due to the limit of observations.

	Total Period				Pre-Crisis		Post-Crisis			
<i>Dep.var</i>	ROA		Delta-MC		ROA		ROA		Delta-MC	
<i>Ind.var</i>										
Firm Size	0.0055	*	0.0046		0.0035		0.0078	**	0.0139	
	(0.0029)		(0.0330)		(0.0029)		(0.0040)		(0.0467)	
Leverage	-0.0002	**	0.0014	*	-0.0002		-0.0002	*	0.0015	
	(0.0001)		(0.0008)		(0.0002)		(0.0001)		(0.0010)	
Liquidity	-0.0149	*	-0.1588	*	0.0252	**	-0.0265	*	-0.6619	***
	(0.0081)		(0.0921)		(0.0106)		(0.0154)		(0.2418)	
Solvability	-0.0001		0.0013		0.0103	***	-0.0002		0.0006	
	(0.0002)		(0.0020)		(0.0023)		(0.0002)		(0.0023)	
Inflation	-0.2132	***	-1.9048	***	-0.1930		-0.6516	***	-7.2556	***
	(0.0213)		(0.2352))		(0.1651)		(0.1373)		(1.5643)	
Interest rate	0.0046	***	0.0723	***	0.0024		0.0075	***	0.1106	***
	(0.0012)		(0.0131)		(0.0038)		(0.0015)		(0.0173)	
Capital Market development	-0.1955	***	1.1523	***	-0.4624	**	-0.1642	***	0.8788	*
	(0.0291)		(0.3360)		(0.2140)		(0.0425)		(0.4925)	
Constant	-0.1144	*	-1.0238		-0.0182		-0.1867	**	-1.0219	
	(0.0683)		(0.7729)		(0.0956)		(0.0930)		(1.1158)	
Observation	2424		1911		594		1362		1327	
R ² -Adjusted	0.0643		0.0620		0.0467		0.0445		0.0665	

*, **, *** denote significance at the 10, 5 and 1 percent levels, respectively. Standard deviation is reported in parentheses for specifications

Table 2. Test of ANOVA

Test employed for examining the different of performance in both ROA and Market Cap growth for Multinational Corporation (MNC) and Domestic Firms (DC). We define MNC as firms with more than 50 percent foreign ownership participation, and DC is otherwise. t-test for mean difference and z-test for median difference. For z-test, we use Wilcoxon rank-sums test.

		Mean	Median	STDev.	Max	Min	t-test		z-test	
ROA	MNC	0.0793	0.0777	0.2037	0.5755	-1.0542	-6.7547	***	-8.1980	***
	DC	-0.0006	0.0301	0.2042	2.2396	-2.6181				
Delta-MC	MNC	0.7034	0.0037	2.5604	23.8428	-0.9533	-2.5173	***	-3.3980	***
	DC	0.3697	-0.1067	2.0507	34.5756	-0.9515				